

REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicants thank the Examiner for carefully considering this application.

Disposition of Claims

Claims 1-4 are pending in this application. Claims 1 and 2 are independent. The remaining claims depend, either directly or indirectly, from claim 2.

Examiner Interview

Applicants thank the Examiner for courtesies extended during the Examiner Interview conducted on June 29, 2009. During the Examiner Interview, Applicants discussed proposed claim amendments as well as the cited prior art. The proposed claim amendments and arguments presented in this response are substantially similar to those discussed during the Examiner Interview. The Examiner is encouraged to contact the representative of the Applicants using the contact information below if any questions or concerns arise.

Claim Amendments

Claims 1 and 2 are amended to clarify aspects of the invention. Further, claim 3 is amended for consistency with amended independent claim 2. No new matter is added by these amendments as support for the amendments may be found, for example, in the Abstract and in paragraphs [0046]-[0047], [0057], and [0091]-[0092] of the specification as published.

Rejections under 35 U.S.C. § 103

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Briens et al., *Application of Sequential Staging of Tasks to Petroleum Reservoir Modeling* (“Briens”) in view of U.S. Patent No. 6,108,608 (“Watts”). To the extent the rejection applies to the pending claims, the rejection is respectfully traversed.

MPEP § 2143 states that “[t]he key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit.” Further, when combining prior art elements, the Examiner “must articulate the following: (1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference; ...” MPEP § 2143(A).

Amended independent claims 1 and 2 recite, in part, “synchronizing the advancement through time of the first reservoir simulation executing on a first computing device and the second reservoir simulation executing on a second computing device” and “translating each of a first hydrocarbon fluid stream of the first reservoir simulation and a second hydrocarbon fluid stream of the second reservoir simulation to a common fluid model of a controller by converting pseudo-components of each of the first hydrocarbon fluid stream and the second hydrocarbon fluid stream to a super-set of pseudo-components used in a first reservoir simulator and a second reservoir simulator.” Thus, the claims clearly require, in part, the synchronization of multiple reservoir simulations, each conducted by a distinct reservoir simulator executing on a separate computing

device, where the pseudo-components of each simulation are translated to a super-set of pseudo-components of a common fluid model. *See* originally-filed specification, paragraphs [0046]-[0047] and [0057].

In contrast, Briens only discloses that reservoir fluid is described as a mixture of hydrocarbon and non-hydrocarbon components. *See* Briens, page 428, introduction. In other words, Briens discloses that the components of a *single* fluid simulation may be apportioned among parallel computers. *See* Briens, page 428, Abstract. However, Briens fails to disclose synchronizing and translating fluid streams generated from *distinct* reservoir simulators to a common fluid model using a *super-set of pseudo-components*. In view of this, Briens fails to disclose or render obvious the synchronization of multiple reservoir simulations, each conducted by a distinct reservoir simulator executing on a separate computing device, where the pseudo-components of each simulation are translated to a super-set of pseudo-components of a common fluid model, as required by amended independent claim 1.

Furthermore, Watts fails to provide that which Briens lacks. Specifically, Watts discloses delumping in the context of a single multi-component simulation. *See* Watts, Abstract. In other words, Watts only discloses that delumping is performed for each component of a multi-component fluid, where the results of each component may be combined in a single multi-component simulation. Thus, similar to Briens, Watts only discloses conducting a *single* simulation. However, Watts is completely silent with respect to conducting multiple reservoir simulations, each simulation being conducted by a distinct simulator. In view of this, Watts fails to disclose or render obvious the synchronization of multiple reservoir simulations, each conducted by a distinct reservoir simulator executing on a separate computing device, where the pseudo-components of each

simulation are translated to a super-set of pseudo-components of a common fluid model, as required by amended independent claim 1.

In view of the above, Briens and Watts, whether considered separately or in combination, fail to disclose or render obvious all the limitations of amended independent claim 1. Thus, amended independent claim 1 is patentable over Briens and Watts. Amended independent claim 2 includes substantially similar limitations as amended independent claim 1 and, thus, is patentable over Briens and Watts for at least the same reasons as amended independent claim 1. Claims 3-4 depend, directly or indirectly, from claim 2 and are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Applicants believe this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 94.0052-US-PCT; 09469/161002).

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